3.13 UTILITIES AND SERVICE SYSTEMS

3.13.1 Environmental Setting

WATER SYSTEM

The City of Sunnyvale derives its water from four sources: local groundwater wells; imported water from the San Francisco Public Utilities Commission (SFPUC); imported supply from the Santa Clara Valley Water District (SCVWD); and recycled water. The first three water sources supply approximately 10%, 50%, and 40%, respectively, of the water used in the City. The fourth source, reclaimed water, comes directly from the City's Water Pollution Control Plant, which generates non-potable, reclaimed water primarily for irrigation purposes.

Nine municipal wells are located in, and are operated by, the City. The wells have a total production capacity of approximately 13,000 acre-feet per year (af/y). Well-water is used to supplement reclaimed water and imported water supplies from the SFPUC and the SCVWD during summer peak demand and emergency events.

The SFPUC supplies approximately 11,000 af/y to the City of Sunnyvale. The SFPUC water originates in the Hetch Hetchy (HH) Reservoir, located in Yosemite National Park. The HH reservoir water is pumped from the Sierra Nevada, across the Central Valley, where it is mixed by the SFPUC with water from local reservoirs within the Alameda Creek watershed (Calaveras and San Antonio Reservoirs). The resulting water is 85% HH water and 15% local reservoir water.

The SCVWD supplies approximately 11,000 af/y to the City of Sunnyvale. The SCVWD source for this water is the Sacramento/San Joaquin Delta via the State Water Project (40% of total) and the Central Valley Project (60% of total).

The City commenced the delivery of reclaimed water to its customers in year 2000. The Sunnyvale Water Pollution Control Plant produces approximately 4 mgd of high quality tertiary effluent, which can be used for non-potable purposes. The City has developed a Water Reclamation Plan, which includes the construction of facilities to deliver recycled water throughout the City for non-potable uses to reduce the demand on existing potable water supply. Phase I of the Water Reclamation Plan has been completed and reclaimed water is currently supplied to Lockheed/Martin, the Moffett Field Golf Course, the Sunnyvale Golf Course, the SMaRT® Station, and Baylands Park. Under Phase II, City parks and industrial areas within the northern portion of the City would be served by recycled water for non-potable uses such as landscape irrigation. Subsequent phases of the reclamation program will include facilities to serve western and southern portions of the City along with extensions to provide service to the Cities of Cupertino and Los Altos.

Water Distribution System

The Moffett Park area is located wholly within the Zone I pressure zone, which primarily includes water from the SFPUC water source (see Exhibit 3.13-1, *Existing Water Distribution System*). A 1995 study of the City's water supply and distribution system indicates that existing storage capacity (27.5 million gallons) is adequate for current and future needs through 2005, excluding disaster situations. The City's Department of Health and Safety (DHS) recommends that a seven-day storage capacity be developed for disasters such as a major earthquake.

The findings of the 1995 report also indicate that the City's Zone I wells could be capped or placed on inactive or reserve status, and two of the six SFPUC connections could also be placed on reserve status without affecting operating pressures in the distribution system.

The report indicates that fire water supply is adequate throughout the system.

Water Demand Management

If the City is built-out according to the planned land uses and policies of the Land-Use Sub-Element, water demand is estimated to be 23 mgd, which is 23% greater than current water consumption. The build-out assessment assumes that all available land in the City will be developed to the maximum extent allowed by current zoning, including new buildings on vacant land and some redevelopment of existing developed land.

Although the City's population increased between years 1984 and 1993, the City was able to reduce water consumption by approximately 10 percent. This reduction is attributed primarily to water conservation in the residential, commercial, and industrial sectors as well as changes in the City's industrial mix.

The City of Sunnyvale adopted water conservation plans in 1989 that required implementation of demand management, including strengthening the inverted rate structure, mandatory water conservation, and implementing best management practices. A 23%-29% reduction in water use was achieved, and conservation goals were met. Water usage restrictions have been established for various levels of drought management including 25%, 35% and 45% reductions.

The City's reclaimed water program will offer an alternative source of water to businesses. Reclaimed water use can reduce the potable water demand in the Moffett Park area.

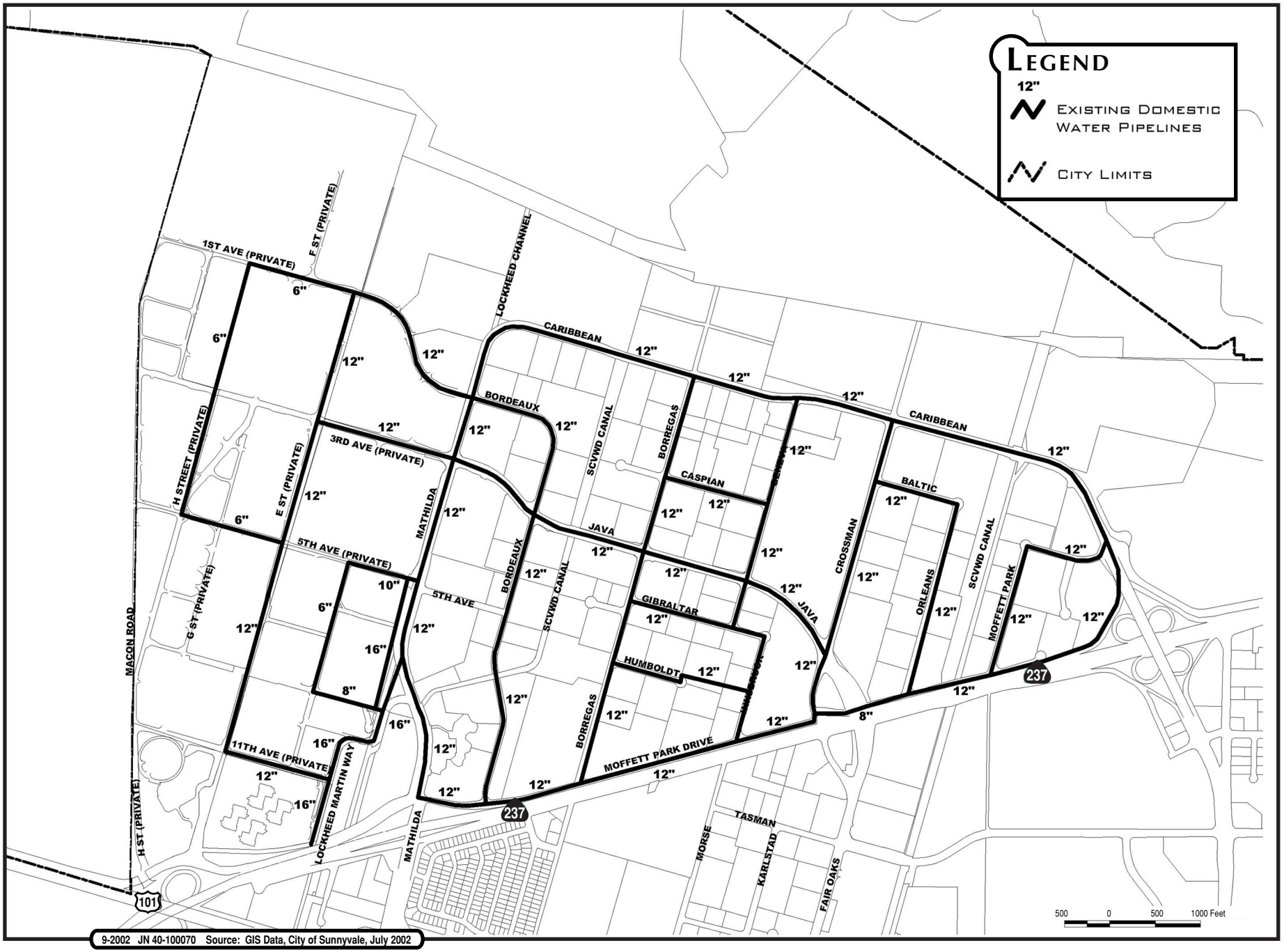
Water Distribution System

Potable Water

The existing water distribution system provides water throughout the Moffett Park area. Potable water distribution pipes traverse the Moffett Park area and range in size from 8 inches to 16 inches.

Recycled Water System

The City of Sunnyvale is implementing a Water Reclamation Plan in several phases. Phase I, now complete, includes a pipeline that carries treated effluent from the Water Pollution Control Plant to Lockheed Martin, the Moffett Field Golf Course, the Sunnyvale Golf Course and Baylands Park. Phase II, also completed, consists of a series of pipelines to serve other parks and industrial areas in the north part of the City, mainly the Moffett Park area (see Exhibit 3.13-2, *Reclaimed Water System*).



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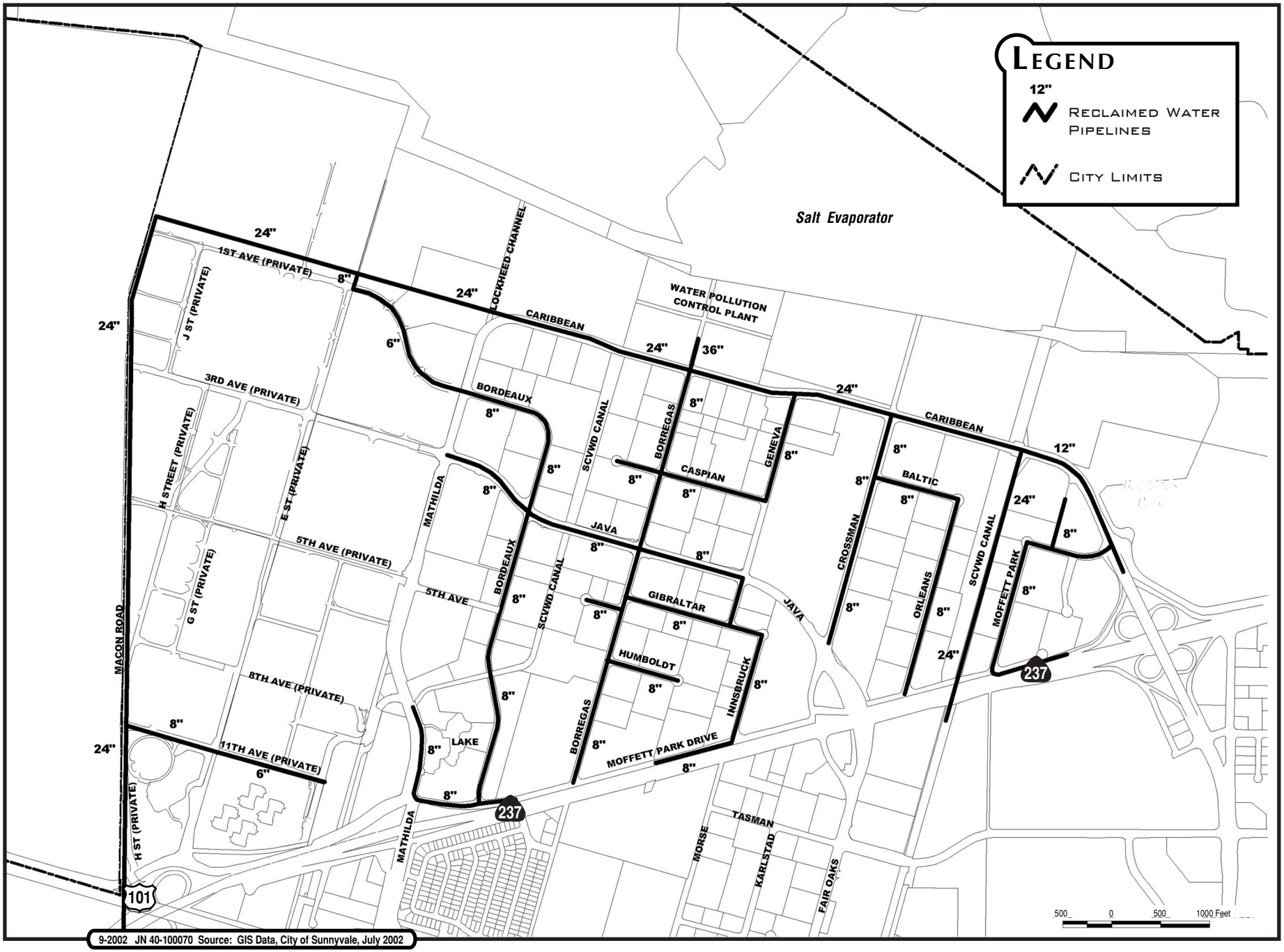
MOFFETT PARK SPECIFIC PLAN EIR

Existing Water Distribution System

Exhibit 3.13-1



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MOFFETT PARK SPECIFIC PLAN EIR

Reclaimed Water System

Exhibit 3.13-2

Phase IIa pipelines include 34,000 lineal feet of distribution piping to serve uses in the Moffett Park area north of Highway 237, plus the first 3,000 lineal feet of the 24-inch "east main" connection, which extends south from Caribbean Drive. Approximately 140 customers are located in the Phase IIa area.

For the users of recycled water, the benefits include:

- Sewer ratepayers benefit by the reduced costs of lowering mass emissions to the San Francisco Bay (i.e. avoided costs of additional sewer effluent treatment process to meet discharge requirements)
- Avoidance of strict conservation and water use restrictions during times of drought and by paying less for potable water
- Potable water users benefit at the same time since more water becomes readily available for the potable water users
- All residents benefit from securing a long-term adequate water supply to sustain economic growth and ensure public health
- All water users benefit from avoidance costs associated with bringing another water source to augment supplies
- SCVWD offers the City a $115 per acre-foot rebate for every acre-foot of recycled water delivered.

The City's recycled water is of the highest quality for non-potable use. It meets the California Code of Regulations (CCR) Title 22 non-restrictive irrigation use criteria. The recycled water is suitable for uses including agricultural and landscape irrigation, toilet and urinal flushing, construction site uses, industrial uses such as cooling, non-body contact landscape and/or recreational impoundments, stream flow augmentation, and wetland enhancement.

WASTEWATER (SEWER)

Wastewater Collection and Treatment Capacity

Most of the sanitary sewers are made up of vitrified clay pipe and are anticipated to be capable of serving the City well into the future. The Water Pollution Control Plant provides wastewater treatment to the Moffett Park area and has the capacity to treat 29.5 million gallons per day (mgd), which is anticipated to serve the City of Sunnyvale treatment needs for the next 30 to 50 years (Sunnyvale Futures Study, 1993). The plant provides primary, secondary and tertiary treatment facilities. The Water Pollution Control Plant is located north of, and adjacent to, Moffett Park and is proximate to the San Francisco Bay. Due to the plant's proximity to the Bay, it must meet more stringent treatment standards than most treatment plants in California and throughout the county.

The Water Pollution Control Plant currently processes approximately 16.1 mgd of effluent, including approximately 2.5 mgd of flow from the Moffett Park area (CH2MHILL Technical Memorandum 1, July 13, 2002). Therefore, the Water Pollution Control Plant is currently operating at approximately 55% of

capacity. Currently, Moffett Park accounts for approximately 2.5 mgd; 8.5% of the treatment plant's total capacity, or 15.5% of the present average dry weather flow.

Moffett Park is located at the north end of the drainage area for the sewer system. Moffett Park is served by three of the five primary sewer drainage areas. The total carrying capacities of the three primary sewer areas are:

Borregas Sewer	17.0 mgd
Lockheed Sewer	4.9 mgd
Lawrence Sewer	22.0 mgd

During peak daytime periods, about 4.2 mgd of sewage can be pumped from the Lawrence Sewer to the Borregas Sewer.

Existing User Charges

Each user pays a monthly fee to the City for transportation and treatment of sewage generated. Sewer system charges for all land uses are based on two factors:

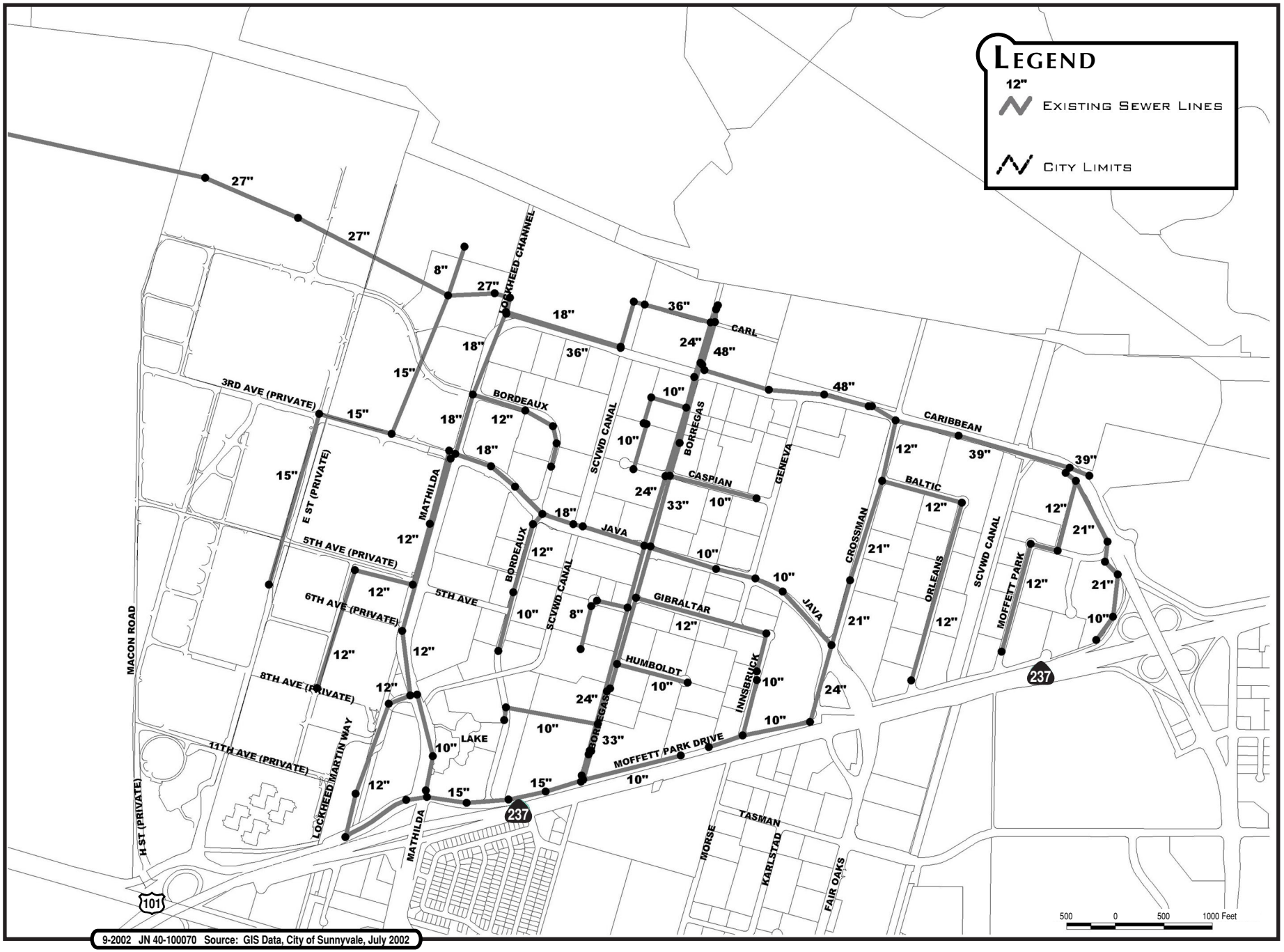
1. The quantity of water consumed as measured by a water meter; and,
2. The strength of the pollutants discharged as measured by tests.

Unit charges for pollutant types (TOC, flow, SS, etc.) are identical for residential, industrial and commercial users. User fees collected are sufficient to pay all costs of operation, maintenance, and administrative expenses of the sewer system. The fees are reviewed periodically to insure that they are sufficient to meet all costs. Industries can install separate water meters for irrigation systems. The irrigation water is then not used in calculating the monthly sewer charge. Industries with their own water wells or those with an end product that contains substantial amounts of water are required to have special meters to measure the flow discharged to the sewer.

Existing Industrial Pretreatment Requirements

The City has prepared and implemented an industrial wastewater pretreatment program to conform to federal regulations in order to reduce the amount and type of pollutants (i.e., oil and grease, heavy metals, toxics, etc.).

Most commercial users do not need to pretreat their wastes. The City requires that all restaurants remove sufficient oils and greases so that the sewage discharged does not contain more than 100 parts per million (ppm) of grease. The Plumbing Code requires installation of grease traps in all restaurants. If sewer plugs occur regularly due to grease, the City takes action to revoke the restaurant's Wastewater Discharge Permit.



9-2002 JN 40-100070 Source: GIS Data, City of Sunnyvale, July 2002

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MOFFETT PARK SPECIFIC PLAN EIR

Existing Sewer System

Exhibit 3.13-3

Existing Wastewater Collection

The existing project area conveys wastewater to the Water Pollution Control Plant through a system of vitrified clay and reinforced concrete pipes ranging in diameter from 8 inches to 36 inches; pipes 36 inches and larger are generally reinforced concrete (see Exhibit 3.13-3, *Existing Sewer System*). The primary collector sewers located in the streets of Moffett Park range from 8 inches to 18 inches in diameter.

The City provides maintenance and repairs to laterals between the property line and the sewer main. All other types of repairs or maintenance of laterals inside the property line are the responsibility of individual property owners.

SOLID WASTE

Sunnyvale provides a broad range of solid waste management services. Bay Counties Waste Services, Inc. collects solid waste generated in the City limits.

Over the past few years, Sunnyvale's management of its solid waste has changed and expanded. October of 1993 marked the final closure of Sunnyvale's landfill, located along the north side of Caribbean Drive, and the opening of the new Sunnyvale Materials Recovery and Transfer (SMaRT®) Station. The SMaRT® Station, in conjunction with the cities of Mountain View and Palo Alto, hosts a major regional recycling and waste transfer facility that is on the leading edge of both materials recovery technology and multi-jurisdictional cooperation.

The City's solid waste now goes to the SMaRT Station where source separated recyclables and yard debris are also received, processed and marketed. The City of Sunnyvale currently generates approximately 112,000 tons of solid waste per year. Commercial users generate approximately 65 percent of the total waste flow. The SMaRT Station's permitted throughput is 1,500 tons per day (tpd) and it currently receives on average 1,100 tpd (Debi Sargent; City of Sunnyvale Solid Waste Division; October 23, 2001). Recyclable materials are sorted from the refuse received at the SMaRT station and marketed for resale. The remaining unrecoverable waste is hauled for disposal to Kirby Canyon Landfill, located at 910 Coyote Creek Golf Drive in San Jose. Kirby Canyon Landfill has a remaining capacity of approximately 19.4 million tons. Under current waste flow conditions, the landfill is projected to close in the year 2038 (Regina Campbell; Kirby Canyon Recycling and Disposal Facility; October 23, 2001). The SmaRT Station is operated pursuant to agreements among the three cities and between each city and Kirby Canyon Landfill. Those agreements terminate in 2021.

ELECTRICITY & NATURAL GAS

As the state continues to grow, demand continues to swell for energy required to operate and maintain the electricity needs of homes, businesses, and local governments. As a result, California has recently been struggling with a serious recurring energy crisis. During the early part of 2001, Northern California experienced back-to-back rounds of rolling blackouts caused by insufficient electricity to serve existing demand. However, electricity conservation, which a year ago showed little promise of success, not only flourished during the crisis, but has continued at a near double-digit pace during 2001 and into early 2002 (Los Angeles Times, *State May Be Re-Energized, but Powerful Questions Remain*, January 20, 2002). It would appear then, that while the California energy market remains volatile and susceptible to service

shortages, that the energy crisis has been moderately abated in the short-term as a result of conservation and as additional power plants and electrical supplies have become contracted and secured.

Natural Gas and electric power are supplied to the Moffett Park Specific Plan area through Pacific Gas and Electric Company (PG&E) under a franchise agreement with the City of Sunnyvale. Future development projects that would occur with the implementation and subsequent buildout of the proposed Specific Plan would increase the demand for services from PG&E. Existing gas and electric facilities are capable of providing services to all areas in the City of Sunnyvale, including Moffett Park.

TELEPHONE AND DATA TRANSMISSION

Telephone and data transmission within the City of Sunnyvale and Moffett Park Specific Plan area is provided by Pacific Bell (a division of SBC Communications, Inc.). All future telephone and data services lines that would be installed to accommodate future development, as guided by the proposed Moffett Park Specific Plan, would be installed underground, pursuant to SBC Communications, Inc. recommendations and adopted City standards (Draft Moffett Park Specific Plan, September 3, 2002).

3.13.2 Environmental Impacts and Mitigation Measures

POTABLE WATER SUPPLY IMPACTS

Thresholds of Significance

Water Resources Sub-Element

3.1D.3 *Expand opportunities for reclaimed water use consistent with ecology needs of the Bay and/or diminished potable water supplies.*

3.1D.3d. *Provide information and assistance to potential reclaimed water customers.*

3.1D.3e. *Monitor use and effectiveness of reclaimed water on turf and landscaping.*

3.1D.2a. *Establish reclaimed water rates in such a way as to attract customers.*

CEQA Guidelines

The following thresholds of significance are based on Appendix G of the State CEQA Guidelines. For the purposes of this project, an aesthetic impact is considered significant if the project would:

- *Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?*

IMPACT 3.13-A **Potable Water Supply: The existing water supply is approximately 35,000 af/y plus 4 mgd (4,480 af/y) of reclaimed water. The proposed project would result in an 868.7 af/y increase in the water demand (a 2.5% increase) above**

the current water supply demand, which is considered a less than significant impact (Less Than Significant Impact).

The amount of water that can be derived from water wholesalers depends on the contract parameters of the available water for all users. The City's 20-year water production forecast falls within the SFPUC and SCVWD water allocations. This imported water is designed to meet the City's consumption needs except in periods of drought or supply reduction of supply stemming from further increases in allocations for environmental concerns. Well water and imported water provide approximately 35,000 af/y to the City of Sunnyvale and an additional 4 mgd are available from water reclamation.

The proposed project would allow for the development of an additional 8,794,516 s.f. of development in the Moffett Park area. The City of Sunnyvale uses a water demand factor for new commercial development of 0.088 gallon per day (gpd) per square foot. Therefore, the proposed project would result in a new demand for water in the amount of 773,917.4 gpd (0.088 gpd x 8,794,516 s.f.). At a conversion factor of 0.00000307 acre-feet per gallon, the project would demand 2.38 acre-feet per day (773,917.4 gpd x 0.00000307 acre-feet per gallon) or 868.7 af/y (2.38 acre-feet/day x 365 days/year).

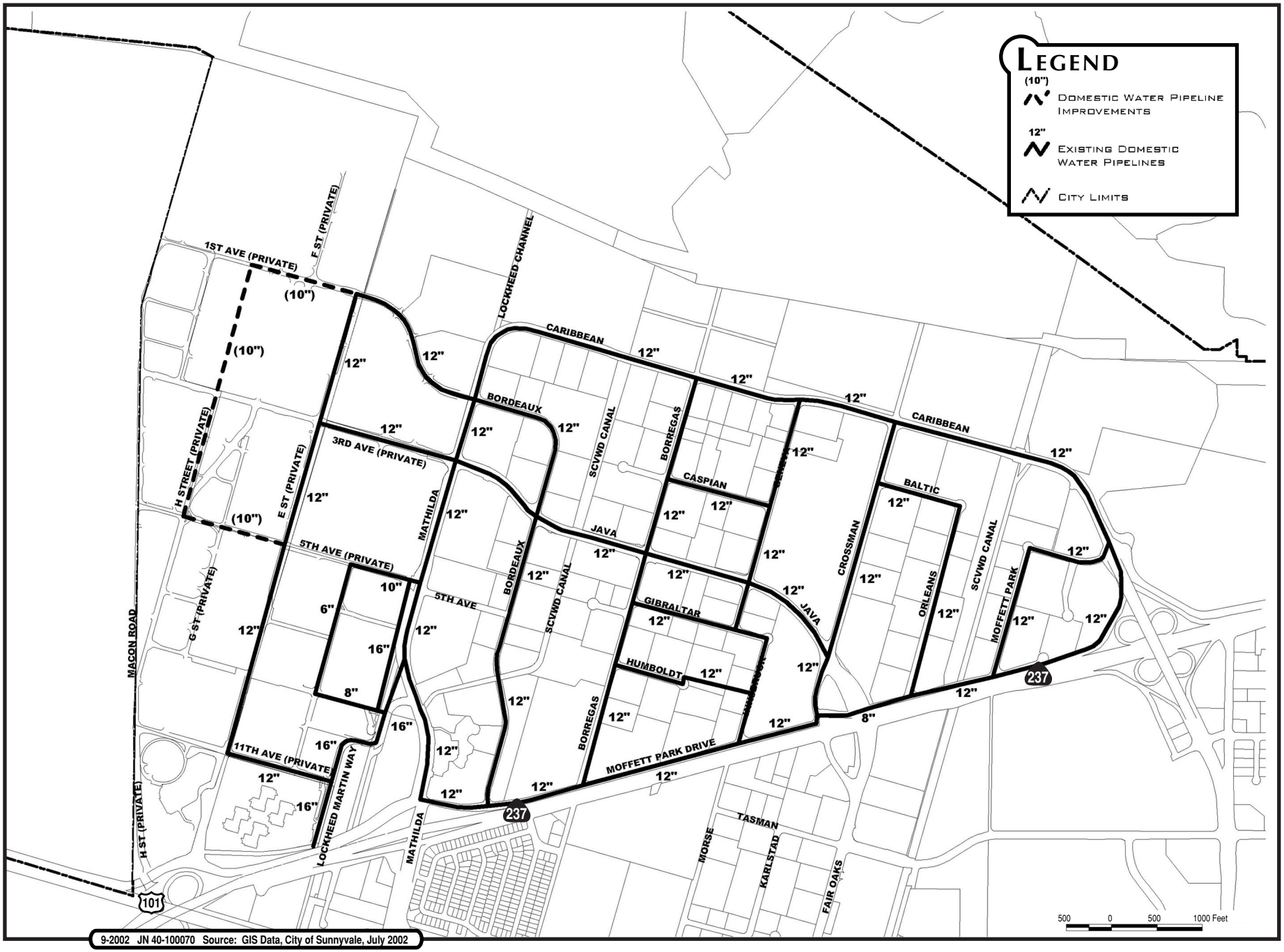
The existing water supply is approximately 35,000 af/y plus 4 mgd (4,480 af/y) of reclaimed water. At an increased water demand of 868.7 af/y, the proposed project would result in a 2.5% increase in the demand for potable water, which is well within future water supply volumes and would result in a less than significant impact.

Mitigation 3.13-A ***Potable Water Supply Impacts: Mitigation Is Not Required***

WATER DISTRIBUTION SYSTEM IMPACTS

IMPACT 3.13-B **Potable Water Distribution System: Existing potable water distribution lines are insufficiently sized to accommodate potable water and fire flow needs throughout the entire Moffett Park Specific Plan area, resulting in a significant impact (Potentially Significant Impact If Not Mitigated).**

The City of Sunnyvale conducted modeling of the water distribution system in Moffett Park to determine if the existing distribution lines could serve the proposed project. Modeling indicates that a portion of the distribution lines would need to be increased in size to meet future fire flow and water supply needs. Based on the modeling, three water distribution lines would need to be "upsized" from 6 inches to 10 inches in diameter (see Exhibit 3.13-4, *Proposed Water Distribution System Improvements*, and Table 3.13-1, *Construction Cost Estimate*).



9-2002 JN 40-100070 Source: GIS Data, City of Sunnyvale, July 2002

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MOFFETT PARK SPECIFIC PLAN EIR

Proposed Water Distribution System Improvements

Exhibit 3.13-4

Table 3.13-1
Construction Cost Estimate: Moffett Park Water Distribution System

Domestic Water Facility Description	Pipeline Diameter	Quantity* LF	Unit Cost Per LF	Estimated Construction Cost**
Pipeline (P-8000)	10"	1,300	$50	$ 65,000
Pipeline (P-8002)	10"	2,950	$50	$147,500
Pipeline (P-8006)	10"	1,150	$50	$ 57,500
			Total =	**$270,000**

* Quantity (length) based on computer model length provided by David Evans and Associates, May 14, 2002
** Construction costs to be privately funded in Lockheed area.

The pipes are indicated as P8000, P8002, and P8006. Without increasing the dimensions of these water lines, a portion of the water distribution system would be insufficient to serve the proposed project for both fire flow and water supply purposes, resulting in a significant impact.

Mitigation 3.13-B1 ***Prior to the approval of Moffett Park Specific Plan, the City of Sunnyvale shall adopt a Capital Improvement Plan for the identified water distribution improvements necessary to serve the Moffett Park Specific Plan project. The Capital Improvement Plan shall identify the location and types of necessary water distribution line improvements, and estimated costs for the improvements. The Capital Improvement Plan may be reviewed and updated, as necessary, over time.***

Mitigation 3.13-B2 ***Prior to the approval of any new developments in the Moffett Park Specific Plan area, the Public Works Department shall review plans to identify any projects which may generate the need for water distribution line improvements as identified in the Capital Improvement Plan.***

Prior to the approval of any new projects in the Moffett Park Specific Plan area identified by the Public Works Department as generating the need for capital improvements, the City of Sunnyvale shall require the project applicants to either pay fees for a "fair share" towards specified capital improvements, or to make the improvements (Less Than Significant Impact With Mitigation).

RECLAIMED WATER IMPACTS

IMPACT 3.13-C **Reclaimed Water Supply and Distribution: Reclaimed water is used to reduce potable water demands for such uses as landscaping and irrigation. This water is delivered through a distribution system separate from the potable water and would not reduce the available capacity in existing potable water lines. Consequently, reclaimed water would be beneficial to overall water availability and would not reduce capacity in the potable**

water distribution system. This would result in a less than significant impact to water supply and distribution (Less Than Significant Impact).

Phase I of the Sunnyvale Water Reclamation Plan has been completed and reclaimed water is being supplied to Lockheed/Martin, the Moffett Field Golf Course, the Sunnyvale Golf Course, Baylands Park and other businesses within the immediate area. Under Phase II of the Water Reclamation Plan, the City will serve parks and industrial areas. Reclaimed water is supplied through a distribution system separate from the potable water supply and, therefore, would not reduce the capacity of existing potable water delivery.

The City of Sunnyvale has a free Irrigation Technical Assistance Evaluation Program (ITAP) available to property owners with land that has at least one acre of landscaping.

Pursuant to the City of Sunnyvale's Municipal Code, 70% of all landscaped areas within office/industrial land use areas shall be required to use water-conserving plants.

12-1 The City shall require that all development projects within the plan area utilize reclaimed water for landscaping.

12-2 The City shall prepare a water conservation program for this area. Each new development shall submit proof of compliance to this program.

12-3 All new development in the project area shall provide water conservation measures including:

- *drought tolerant plants*
- *drip irrigation*
- *watering schedule*
- *low flow toilets*

12-4 The City shall encourage all developers to utilize the ultra low flush toilet rebate program. (City of Sunnyvale's Water Conservation Department)

12-5 Water during the morning or evening to minimize evaporation.

The reclaimed water supply is to be used to reduce potable water demands for such uses as landscaping and irrigation. Consequently, increased use of reclaimed water will not reduce potable water supply, and instead would be beneficial to overall water supply. Since reclaimed water is delivered through a delivery system separate from the potable water, it would not reduce the available capacity in existing potable water lines. Continued use and development of the City of Sunnyvale Water Conservation Plan will result in less than significant impacts to water supply and distribution.

Mitigation 3.13-C ***Reclaimed Water Impacts: Mitigation Is Not Required***

IMPACTS RELATED TO QUALITY OF WATER SUPPLY

IMPACT 3.13-D **The existing water quality monitoring system in the City of Sunnyvale results in water quality levels that either meet or exceeds federal or state requirements. The addition of new development in the Moffett Park Specific Plan area would not modify water quality monitoring systems and, therefore, future water supply is anticipated to meet or exceed federal or state standards, resulting in a less than significant impact (Less Than Significant Impact).**

The City has instituted a thorough and comprehensive water quality monitoring program that addresses City-owned and private wells and water purchased from SFPUC and SCVWD to ensure the City meets all regulatory requirements. According to the 2000 Water Quality Report, the City of Sunnyvale met all established water standards. No MTBE was detected in any of the nine city-owned water wells. The City is in compliance with these requirements and no MCLs or MCLGs have been exceeded.

SFPUC and SCVWD waters originate from different sources and are subject to different water quality concerns. Both agencies have rigorous water quality monitoring and quality protection programs. The main concern of the HH Reservoir supply is the adequacy of the disinfecting process for microbial organisms. The main concerns with the quality of the SCVWD's Delta water are the organics and bromides originating from agricultural flow. These contaminants react with chlorine, which is used for disinfection, and produce potentially carcinogenic by-products.

Water quality can vary throughout the year since there are three different water sources in Sunnyvale's system. These waters blend within the distribution system depending on the daily demand, seasonal fluctuations, and disruptions due to maintenance of facilities which results in water quality variances. In all cases, Sunnyvale's water quality either meets or exceeds federal or state requirements resulting in a less than significant water quality impact.

Mitigation 3.13-D ***Water Quality Impacts: Mitigation Is Not Required***

WASTEWATER TREATMENT CAPACITY IMPACTS

Threshold of Significance

Sanitary Sewer System Sub-Element

3.3A.1. City shall provide for limitations on flow generated by new industries and enlargements of existing industries so that the total flow to the Water Pollution Control Plan will not exceed the safe operating capacity of the plant but under no circumstances is it to exceed 29.5 MGD.

CEQA Guidelines

The following thresholds of significance are based on Appendix G of the State CEQA Guidelines. For the purposes of this project, an aesthetic impact is considered significant if the project would:

- *Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?*

- *Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?*

- *Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?*

Other Agency

No other agency thresholds have been identified.

IMPACT _3.13-E: **Wastewater Treatment Capacity: The proposed project would allow for the intensification of land uses which would be similar in nature to existing land uses in Moffett Park. The project would allow for an additional 8,794,516 s.f. of development, generating a new demand of approximately 2.49 mgd, or 8% of the total 29.5 mgd of Water Pollution Control Plant capacity. Since sufficient wastewater treatment capacity is available to serve proposed project development, a less than significant impact to wastewater treatment plant capacity would result (Less Than Significant Impact).**

In year 2020, wastewater flows to the Water Pollution Control Plant are estimated to total 18.5 mgd including the proposed project and other Citywide development (CH2MHILL Technical Memorandum 1, July 14, 2002). The proposed project would allow for the intensification of land uses by up to 8,794,516 square feet (s.f.) of uses similar in nature to existing uses.

The City has developed waste generation factors. They are as follows:

Residential	
R-1	1,500 gpad (gallons per acre per day)
R-2	3,170 gpad
R-3	4,800 gpad
Industrial	
Controlled	3,000 gpad average, 4,500 gpad peak
Potential	6,000 gpad average, 10,000 gpad peak
Commercial	
Exclusive of Restaurants	3,000 gpad (does not specify FAR)
Restaurants and Malls	*To Be Determined*

Based on modeling conducted for the proposed project and the City's waste generation factors, the proposed project would generate the demand for an additional approximately 2.49 mgd at buildout, or an additional 8% of the total Water Pollution Treatment Plant capacity. Future generation of wastewater by the proposed project and the remaining City of Sunnyvale development (year 2020) would be 18.55 mgd, or 63% of capacity. The Water Pollution Control Plant would have sufficient capacity to treat wastewater

generated by the proposed project and a less than significant impact to wastewater treatment plant capacity would result.

Mitigation 3.13-E ***Wastewater Treatment Capacity Impacts: Mitigation Is Not Required***

WASTEWATER COLLECTION AND CONVEYANCE SYSTEM IMPACTS

IMPACT 3.13-F **Wastewater collection and conveyance lines currently serve development throughout Moffett Park. However, the existing collection and conveyance lines would be insufficient in certain areas to accommodate the addition of 8,794,516 s.f. of development and, therefore, a significant impact to wastewater collection and conveyance would result (Potentially Significant Impact If Not Mitigated).**

The City of Sunnyvale conducted modeling of the wastewater collection and conveyance system's performance for the existing and existing-plus-project buildout conditions for dry weather flows and wet weather flows during a 10-year, 4-hour storm event. The existing-plus-project modeling included wastewater flows of the entire City including the project area. The modeling was conducted to determine if collection and conveyance system improvements would be required with the intensification of the Specific Plan area.

Results from modeling wastewater system flows indicate that some collection and conveyance system improvements will be necessary to accommodate the project under buildout conditions, with anticipated City flows (see Exhibit 3.13-5, *Proposed Sewer System Improvements*, and Table 3.13-2, *Recommended Sewer Improvements and Estimated Costs*). The criteria of the depth of flow not exceeding 75% of the pipe diameter at average dry weather flow was used to determine the necessary improvements. The slope of some existing collection and conveyance lines needs to be adjusted to improve flows through the project area to the Water Pollution Control Plant (refer to Table 3.13-2). Estimated costs of improvements range from $10,000 along Mathilda Avenue at Java Street to $350,000 along Crossman Avenue at Java Street. The cost of all improvements needed to serve the proposed project are estimated to be $660,000 throughout the Moffitt Park Specific Plan area.

The largest slope adjustments would be required in approximately 1,140 lineal feet of pipe along Crossman Avenue near Java Street; this segment would need to be lowered from about –1.52 feet to –5.17 feet over a length of 90 feet.

Mitigation 3.13-F1 ***Prior to the approval of Moffett Park Specific Plan, the City of Sunnyvale shall adopt a Capital Improvement Plan for the identified wastewater improvements necessary to serve the Moffett Park Specific Plan project. The Capital Improvement Plan shall identify the location and types of necessary wastewater collection and conveyance line improvements, and estimated costs for the improvements. The Capital Improvement Plan may be reviewed and updated, as necessary, over time.***

Mitigation 3.13-F2 ***Prior to the approval of any new developments in the Moffett Park Specific Plan area, the Public Works Department shall review plans to identify any***

projects that may generate the need for wastewater collection and conveyance line improvements as identified in the Capital Improvement Plan.

Prior to the approval of any new projects in the Moffett Park Specific Plan area identified by the Public Works Department as generating the need for capital improvements, the City of Sunnyvale shall require the project applicants to either pay fees for a "fair share" towards specified capital improvements, or to make the improvements (Less Than Significant Impact With Mitigation).

SHORT-TERM SOLID WASTE IMPACTS

Thresholds of Significance

CEQA Guidelines

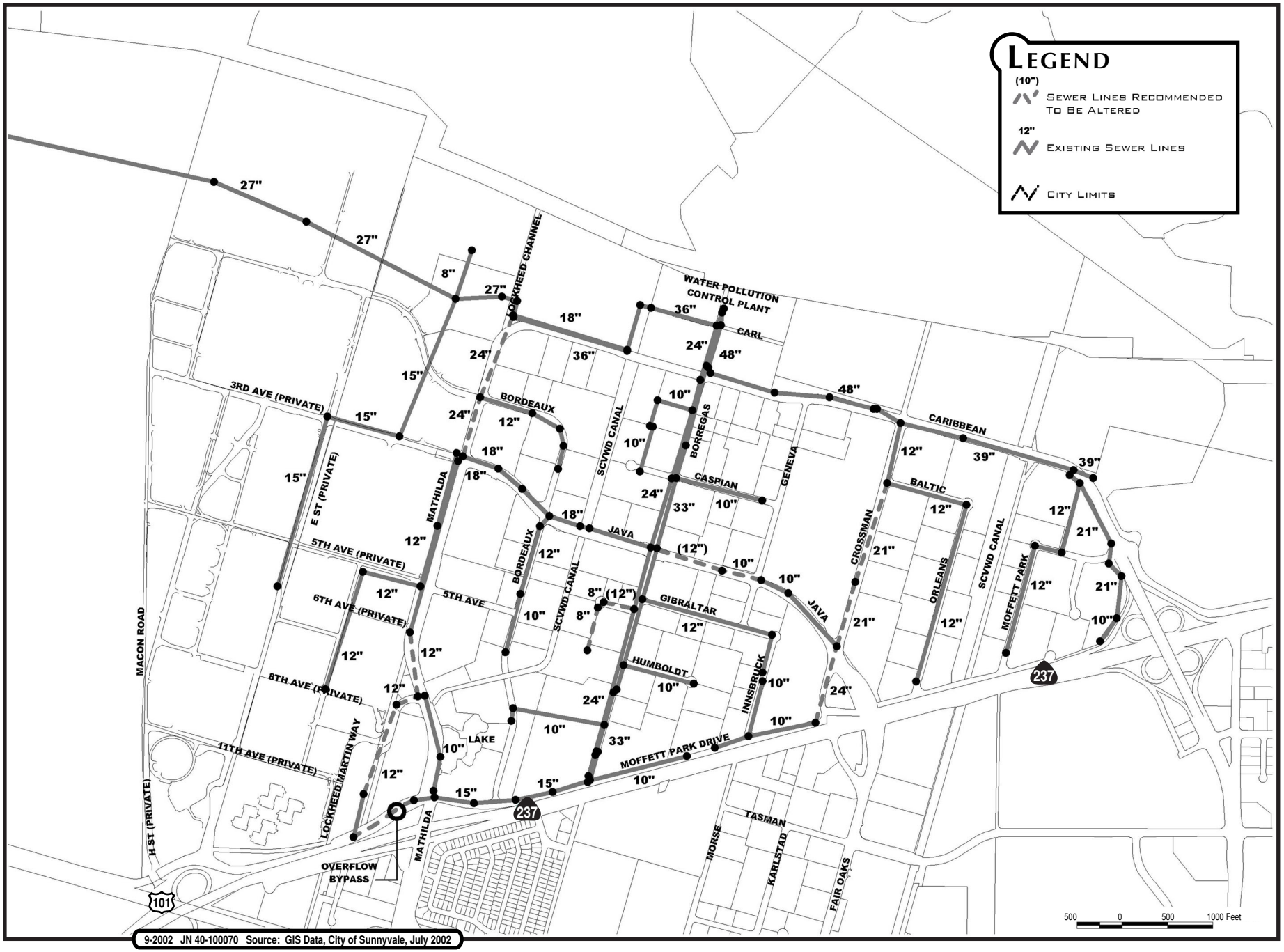
The following thresholds of significance are based on Appendix G of the State CEQA Guidelines. For purposes of this project, a significant solid waste impact would occur if the project would not:

- *Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs.*

  And/or would not:

- *Comply with federal, state, and local statutes and regulations related to solid waste.*

IMPACT 3.13-G **Short-Term Solid Waste: The proposed project would generate short-term construction and demolition debris during construction which would be disposed of in a Class II or Class III landfill. The Kirby Canyon Landfill and the SMaRT Station have sufficient remaining capacity to accept construction-related wastes and debris through 2021. Therefore, the project would result in a less-than-significant short-term construction impact (Less Than Significant Impact).**



9-2002 JN 40-100070 Source: GIS Data, City of Sunnyvale, July 2002

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MOFFETT PARK SPECIFIC PLAN EIR

Proposed Sewer System Improvements

Exhibit 3.13-5

Table 3.13-2
Recommended Sewer Improvements and Estimated Costs

Location	Main Street	Cross Street	Proposed Alteration	Existing Pipe Diameter	Length (LF)	Additional Alteration	Estimated Unit Cost [1]	Estimated Construction Cost [2]
1	Gibraltar Court	North Borregas Avenue	CB.0046 -> CB.0044	8"	485	Alter slope - Raise Downstream Invert from 0.43 to 1.57		
			CB.0044 -> CB.0042	8"	90	Alter slope - Raise U/S Invert from 0.43 to 1.57 and Alter slope - Raise D/S Invert from -0.65 to 1.45		
			CB.0042 -> CB.0040	8"	345	Alter slope - Raise U/S Invert from -0.65 to 1.45 Alter Diameter from 8" to 12"		
	TOTAL				**920**	**LF**	$50 /LF	$50,000
2	Crossman Avenue	Java Street	LW.5670 -> LW.5680	24"	875	Alter slope - Lower D/S Invert from 0.07 to -3.80		
			LW.5680 -> LW.5690	21"	740	Alter slope - Lower U/S Invert from 0.07 to -3.80 Alter slope - Lower D/S Invert from -1.52 to -5.17		
			LW.5690 -> LW.5700	21"	1140	Alter slope - Lower U/S Invert from -1.52 to -5.17		
	TOTAL				**2755**	**LF**	$125 /LF	$350,000
3	Java Street	North Borregas Avenue	BB.LW10 -> BB.0032	10"	440	Alter slope - Raise D/S Invert from -1.86 to 0.00		
			BB.0032 -> CB.LB10	10"	830	Alter slope - Raise U/S Invert from -1.86 to 0.00 Alter Diameter from 10" to 12"		
	TOTAL				**1270**	**LF**	$70 /LF	$90,000
4	Mathilda Avenue	1st Street (Within Lockheed Basin)	LB.0090 -> LB.0080	12"	1045	Alter slope - Raise D/S Invert from 3.48 to 5.46		
			LB.0080 -> LB.0070	12"	250	Alter slope - Raise U/S Invert from 3.48 to 5.46 Alter slope - Raise D/S Invert from 2.77 to 4.57		
			LB.0070 -> LB.0060	12"	710	Alter slope - Raise U/S Invert from 2.77 to 4.57		
	TOTAL				**2005**	**LF**	$75 /LF	$160,000
5	Mathilda Avenue	Java Street	LB.0050 -> LB.0040	12"	75	Alter Diameter from 12" to 18"		
	TOTAL				**75**	**LF**	$115 /LF	$10,000
			Total estimated construction Cost					**$660,000**

[1] Based on CH2MHill's Moffett Park sewer analysis and recommended sewer system alterations.
[2] Costs in Year 2002 Dollars. Rounded to the next highest $10,000

General Notes:

a. These recommendations are based on the City-provided information to CH2M HILL. Field verification (flow monitoring and surveying) should be performed prior to project design.
b. Based on the assumption that altering the slope would require similar cost as constructing a new larger sewer.
c. Prior to any redevelopment activities, a 7-day recording flow monitoring shall be performed
d. Costs in Year 2002 Dollars. Rounded to the next highest $10,000

The proposed project would generate construction and demolition debris typical of office building and parking structure construction during the phased development. Demolition debris, such as asphalt, is currently processed for resale by several companies. Whenever possible, the demolition debris material would be reused on site for the construction of the proposed project (refer to Section 2.5.1, *Use of Recycled Building Material*). Material that could not be recycled or reused would be transported to the SMaRT Station or the Kirby Canyon Landfill.

As discussed in Section 3.6, Hazards and Hazardous Waste, the project site has a history of groundwater contamination. However, remediation efforts to address the contamination are underway. In addition, the presence of significant soil contamination was not identified in the Phase 1 investigation. To ensure potential exposure to hazardous materials does not occur during or after construction, excavation activities would be monitored for contaminated soil (refer to Mitigation 3.6-C1). If contaminated soils are discovered, they would be disposed of off-site. Additionally, existing underground storage tanks (UST) would be removed and disposed of off-site. The nearest landfill that would accept contaminated soils and USTs from the project site would be the Class II Keller Canyon Landfill in Pittsburgh (Joe Griffith; Allied Waste; November 2, 2001) or the Altamont Class II Landfill (Jeff Maffeer; Waste Management; November 1, 2001). Because capacity is available, disposal of construction debris would result in a less-than-significant impact.

Mitigation 3.13-G ***Short-term Solid Waste Impacts: Mitigation Is Not Required.***

LONG-TERM SOLID WASTE IMPACTS

Thresholds of Significance

CEQA Guidelines

The following thresholds of significance are based on Appendix G of the State CEQA Guidelines. For purposes of this project, a significant solid waste impact would occur if the project would not:

- *Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs.*

  And/or would not:

- *Comply with federal, state, and local statutes and regulations related to solid waste.*

For the purposes of this analysis, the following City of Sunnyvale General Policies and Action Statements are used as additional thresholds to determine the significance of impacts. Other Policies and Action Statements identified in the General Plan would not apply because they contain non-mandatory criteria (i.e. "encourage" or "consider" rather than "require", "avoid", or "insure"), and/or they do not specifically related to the proposed project.

Solid Waste Sub-Element

3.2B.1	*Reduce generation of solid waste by providing source reduction programs and promoting source reduction behavior.*
3.2B.1b	*Encourage and facilitate private source reduction programs, services and facilities.*
3.2B.2	*Maximize diversion of solid waste from disposal by use of demand management techniques, providing and promoting recycling programs, and encouraging private sector recycling.*
3.2B.1c.	*Provide comprehensive and ongoing public education programs to encourage source reduction behavior by Sunnyvale residents and businesses.*
3.2B.4	*Increase demand for recycled materials by advocating local, state and federal legislation that will increase use of recycled content products.*
3.2B.4a	*Identify and support proposed laws and administrative actions that would increase the demand for and value of recycled materials in a cost effective manner.*
3.2D	*Dispose of solid waste generated within the City in an environmentally sound, dependable, and cost-effective manner.*
3.2E	*Minimize potential future City liability for wastes generated in the City.*
3.2H	*Manage the closed Sunnyvale Landfill in a manner that protects the public health and safety and the environment, promotes enjoyable public use of the site, and assists in the achievement of other goals of the Solid Waste Sub-Element.*

IMPACT 3.13-H **Long-term Solid Waste: Daily office operations of specific plan land uses would generate solid waste that would have a long-term impact on solid waste services and landfill capacity. Although the City's landfill and transfer station contractual arrangements are in place until at least 2021, the proposed project would substantially increase the amount of solid waste generated at the proposed project site (Potentially Significant Impact If Not Mitigated).**

The proposed Project would increase the development potential in the specific plan area by 8,795 square feet and generate 8,003 tpd of solid waste more than current levels. This solid waste increase does not account for reductions that would also be anticipated with recycling mechanisms. The increase in waste generated by the project would be considered substantial and mitigation measures would be required.

The proposed project would generate office waste typical of commercial development. Source separated office waste, such as paper, cardboard, aluminum cans, etc., is currently collected by several companies for reuse. Recyclable materials are also sorted from the mixed refuse received at the SmaRT Station. Material that could not be recycled would be transported to SMaRT Station/Kirby Canyon Landfill. The

waste generated by the project would represent a small percentage of the remaining capacity at the SMaRT Station and Kirby Canyon Landfill (Gail Bentley; City of Sunnyvale Solid Waste Program, Public Works; October 23, 2001), and would not result in any violations of national, state or local standards. Recyclable materials and waste generated as a result of the proposed project would not result in the need for additional systems or services (Gail Bentley; City of Sunnyvale, Public Works; October 23, 2001).

The project would be provided by private, unregulated vendors with on-site recycling of newspaper, mixed paper, cardboard, two types of plastic, glass containers and aluminum and bimetal cans. The City would provide cardboard recycling. The applicant would pay the cardboard recycling fee in addition to the waste disposal fee. The City would provide information to the facilities managers of future development projects regarding recycling. As part of the site plan review process, the project would incorporate space for both garbage and recycling storage for project employees.

Mitigation 3.13-H ***Prior to issuance of the first building permit, the applicant shall submit a Solid Waste/Recycling Management Plan for City staff review and approval. At minimum, this plan shall include bin sizes and locations for solid waste, and the allocation of separate bins for paper, glass, plastic, newspaper, cardboard or other recyclables.***

ELECTRICITY & NATURAL GAS IMPACTS

Thresholds of Significance

The following thresholds of significance are based on Appendix G of the State CEQA Guidelines. For the purposes of this project, an electricity impact is considered significant if the project would:

- *Use fuel, water or energy in a wasteful manner.*
- *Result in a need for new systems or supplies, or substantial alteration to power utilities.*

Additionally, the following City of Sunnyvale General Policies and Action Statements are used in addition to Appendix G of the State CEQA Guidelines as applicable thresholds to determine the level of environmental significance. Other Policies and Action Statements identified in the General Plan would not apply because they contain non-mandatory criteria (i.e. “encourage” or “consider” rather than “require”, “avoid”, or “insure”), and/or they do not specifically related to the proposed project.

There are no relevant General Policies or Action Statements related to electrical or natural gas demand.

IMPACT 3.13-I **Future development projects that would occur with the implementation and subsequent buildout of the proposed Specific Plan would increase the demand for Electrical and Gas utility services and may require the relocation and/or under grounding of existing and future utility lines (Potentially Significant Impact If Not Mitigated).**

Natural Gas and electric power are supplied to the Moffett Park Specific Plan area through Pacific Gas and Electric Company (PG&E) under a franchise agreement with the City of Sunnyvale. Future development projects that would occur with the implementation and subsequent buildout of the proposed Specific Plan would increase the demand for services from PG&E. Existing gas and electric facilities are capable of providing services to all areas in the City of Sunnyvale, including Moffett Park. The proposed Specific Plan would allow future development within the Moffett Park area to occur at an increased density and intensity. Therefore, the future demand for electrical and gas services would increase as a result of implementation and subsequent buildout of the Specific Plan area.

Based on the electrical consumption factors outlined in Table 3.13-3 below, the future development that could occur in the Moffett Park Specific Plan area under the existing City of Sunnyvale General Plan and Zoning Ordinance could consume approximately 34.7 million Kilowatt hours (kWh) of electricity per year. The future development that could occur as a result of implementation and subsequent buildout of the Specific Plan could consume approximately 113 kWh of electricity per year. Therefore, the implementation and subsequent buildout of the proposed Specific Plan could increase the demand for electrical power in the Specific Plan area by approximately 78.3 million kWh per year (an increase of approximately 225 percent) beyond current General Plan buildout conditions.

Table 3.13-3
Projected Energy Consumption of the Moffett Park Specific Plan Area

	Future Development Potential (Additional Amount of Building Space allowed in Square Feet)	Electrical Consumption Factor (kWh/sf/year)	Estimated Electrical Consumption (kWh/year)
Buildout of the Specific Plan Area under the Existing General Plan	2.7 million	12.84	34.7 million
Buildout of the Specific Plan area under the proposed Specific Plan	8.8 million	12.84	113 million

Notes: The electrical consumption factor of 12.84 is for "office uses".
kWh=Kilowatt hours sf=square feet
Source: PG&E, Commercial Building Survey Report, 1999.

Based on the natural gas consumption factors outlined in Table 3.13-4, the future development that could occur in the Moffett Park Specific Plan area under the existing City of Sunnyvale General Plan and Zoning Ordinance could consume approximately 64.3 million kilo-British thermal units (Kbtu) of natural gas per year. The future development that could occur as a result of implementation and subsequent buildout of the Specific Plan could consume approximately 209.4 million Kbtu of natural gas per year. Therefore, the implementation and subsequent buildout of the proposed Specific Plan could increase the demand for natural gas in the Specific Plan area by approximately 145.1 Kbtu per year (an increase of approximately 225 percent) beyond current General Plan buildout conditions.

Table 3.13-4
Projected Natural Gas Consumption of the Moffett Park Specific Plan Area

	Future Development Potential (Additional Amount of Building Space allowed in Square Feet)	Natural Gas Consumption Factor (Kbtu/sf/year)	Estimated Natural Gas Consumption (Kbtu/year)
Buildout of the Specific Plan Area under the Existing General Plan	2.7 million	23.8	64.3 million
Buildout of the Specific Plan area under the proposed Specific Plan	8.8 million	23.8	209.4 million

Notes: The natural gas consumption factor of 23.8 is for "office uses".
kWh=Kilowatt hours sf=square feet
Source: PG&E, Commercial Building Survey Report, 1999.

Future development projects within the Specific Plan area would likely require the construction of new electrical and gas utility lines and/or the relocation/modification of existing lines. Property owners/developers of future development projects would be required to coordinate the construction of new and the relocation/undergrounding of existing electrical and gas utility lines with PG&E. Easements would be required on individual properties for access to and maintenance of the utility lines. Future connections to the existing gas and electric power system can typically be designed and installed by PG&E within twelve months of receipt of individual project development plans. Pursuant to the requirements of the proposed Specific Plan and Title 19 of the Sunnyvale Municipal Code, undergrounding of utility improvements are required as a condition of approval for all private development in the Specific Plan area.

According to PG&E, the planning, design, and construction of electrical and natural gas utility lines for development projects typically involves a six-step process as described below:

- Step 1: Application for new services: property owner/developer fills out and submits application for services.
- Step 2: Field Meeting: PG&E representatives meet with property owner/developer representatives at the project site to discuss gas and electrical service requirements and the construction process. Service routes, right-of-ways for easements, tree trimming, construction responsibilities, temporary construction power, schedule, preliminary costs, and rates are discussed at the field meeting.
- Step 3: Engineering: PG&E identifies costs, prepares construction drawings, orders critical materials with long lead times, and coordinates service engineering with other utilities.
- Step 4: Billing, Contracts and Right-of-Way: Property owner/developer submits all contracts and payments, and right-of-way information.

- Step 5: Construction: Property owner/developer and/or PG&E construct the electrical and gas improvements.

- Step 6: Meter Set: PG&E sets electric and gas meters to begin services.

The construction of new and/or relocation/undergrounding of existing electrical and gas utility lines could result in short-term impacts to service in the area. However, PG&E would plan the construction of the improvements to minimize construction impacts. Construction impacts would be short-term and temporary, and would be considered less than significant

Property owners/developers of future development in the Specific Plan area would be required to apply for natural gas and electric services from PG&E (refer to the six-step process described above). During the application and construction process, engineers from PG&E would determine the feasibility of providing electrical and gas services to the proposed development project. If the substation that would provide power to the proposed project does not have adequate capacity to serve the proposed development project, then PG&E would likely expand the capacity of the substation to provide service to the project.

As the state continues to grow, demand continues to swell for energy required to operate and maintain the electricity needs of homes, businesses, and local governments. As a result, California has recently been struggling with a serious recurring energy crisis. During the early part of 2001, Northern California experienced back-to-back rounds of rolling blackouts caused by insufficient electricity to serve existing demand. However, electricity conservation, which a year ago showed little promise of success, not only flourished during the crisis, but has continued at a near double-digit pace during 2001 and into early 2002 (Los Angeles Times, State May Be Re-Energized, but Powerful Questions Remain, January 20, 2002). It would appear then, that while the California energy market remains volatile and susceptible to service shortages, that the energy crisis has been moderately abated in the short-term as a result of conservation and as additional power plants and electrical supplies have become contracted and secured. However, the cumulative effects of future development projects within the Specific Plan area and other pending and approved projects in the region would further impact existing electrical and gas utility supplies and may contribute to future rolling blackouts in the event of recurring statewide energy shortages. Therefore, impacts that could occur from future development in the Specific Plan area would be considered potentially significant and mitigation measures would be required.

Mitigation 3.13-I ***In order to reduce escalating energy demands generated by implementation of future projects or the subsequent increase in building intensity FAR, all future development projects in the Moffett Park Specific Plan area shall be required to implement the following mitigation measures:***

- ***Prior to issuance of all building permits, the City of Sunnyvale shall review project plans to ensure that the project is designed in accordance with the energy conservation measures under Title 24 of the California Administrative Code.***

- ***The City of Sunnyvale shall require that new development within the Specific Plan area prepare an energy conservation plan as part of the development application. The plans shall include techniques to***

minimize the use of electricity. Techniques may include, but are not limited to, the following:

- ***Lighting: use of fluorescent light bulbs, motion detections systems for lights, and task lighting***
- ***Heating and Cooling: use of energy efficient HVAC systems, evaporative condensers, PG&E equipment rebates, solar chimneys, roof wetting systems during summer months, automatic louvers, and high efficiency fans.***
- ***Appliances: use of computers and appliances with energy star labels***
- ***Building and site: Installation of spectrally-selective windows, perimeter blinds, energy efficient installation, skylights, tightly sealed duct connections, movable awnings, and landscaping and trees to provide shade.***
- ***Policies: company policies that require employees to turn off computers, lights, printers, copy machines, etc. when operation is not necessary (Less Than Significant Impact With Mitigation).***

With the implementation of the above mitigation measure, potential impacts to electric and gas services would be considered less than significant.

TELEPHONE & DATA TRANSMISSION IMPACTS

Thresholds of Significance

The following thresholds of significance are based on Appendix G of the State CEQA Guidelines. For the purposes of this project, a communication service and data/cable transmission impact is considered significant if:

- *The demand for utility services generated by the proposed development would exceed the capacity of the utility system.*
- *The project would result in a need for new systems or supplies, or substantial alteration to communication systems.*

Additionally, the following City of Sunnyvale General Policies and Action Statements are used in addition to Appendix G of the State CEQA Guidelines as applicable thresholds to determine the level of environmental significance. Other Policies and Action Statements identified in the General Plan would not apply because they contain non-mandatory criteria (i.e. “encourage” or “consider” rather than “require”, “avoid”, or “insure”), and/or they do not specifically related to the proposed project.

There are no relevant General Policies or Action Statements related to communication service and data/cable transmission service.

IMPACT 3.13-J **Telephone and Data Transmission Service: Future implementation of the proposed Specific Plan could result in the demand for additional telephone services and/or data transmission lines on a project-by-project basis, and may require minor improvements to the existing telephone utility and/or data transmission infrastructure. SBC Communications, Inc. reports that it has the capability and resources to accommodate future improvements that may be required in the Plan area (Bruce Bowhall; SBC Communications, Inc./Pacific Bell; November 1, 2001) (Less Than Significant Impact).**

Since telephone and data transmission service are already provided to the proposed Specific Plan area, future demand for additional service and/or improvements that could arise from implementation of the proposed Specific Plan could be necessary to serve the specific and/or specialized demand associated with the functions and operations of future projects within the Plan area. Until the site-specific project demand for telephone and data transmission service (including fiber optics) can be quantified, the extent of communication/data infrastructure improvements will not be known. However, it is anticipated that telephone and data transmission service providers would provide adequate phone capacity to the proposed Specific Plan area, and have the facilities and resources to meet future telephone and data transmission infrastructure needs that could arise from future implementation of the proposed Specific Plan (Less Than Significant Impact).

Mitigation 3.13-J ***Telephone and Data Transmission Impacts: Mitigation Is Not Required.***

3.13.3 Conclusion

With the implementation of the mitigation measures identified in this section, the potential utilities and service system impacts of future development projects under the direction of the Moffett Park Specific Plan would be reduced to less than significant levels.